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April 24th, 1993

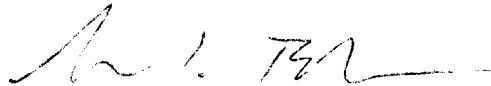
Office of the Secretary
Federal Communications Commission
Washington, D.C. 20554

MAY 28 1993

FCC MAIL BRANCH

Enclosed are comments from Airborne Express/Airborne Freight Corporation concerning FCC Notice of Proposed Rulemaking (NPRM) Docket 92-235. An original and nine copies are enclosed so that each Commissioner may review our comments. Please distribute copies to each Commissioner.

Sincerely,



Spencer L. Bahner
Radio Communications Specialist

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Introduction

Airborne Freight Corporation and its wholly owned subsidiaries, Airborne Express Corporation and ABX Air, operate one of the fastest growing overnight package delivery organizations in the world. Our United States ground delivery operation has in service over 8500 mobile, portable, and fixed radios, operating in the VHF, UHF and 800/900 MHz frequency ranges. These radios are essential to the efficient and profitable pickup and delivery of packages.

Without access to sufficient radio spectrum, our ground delivery operations grind to a halt. Because of the critical nature of electronic communications to our business activities, Airborne Freight Corporation is concerned over the direction in spectrum reallocations suggested by NPRM 92-235.

Specifically, Airborne Freight is concerned about the impact on our existing VHF and UHF radio systems resulting from the changes proposed in NPRM 92-235. These systems bear a relatively small portion of the huge amount of radio traffic Airborne operations generate each day. However, the cost to replace these VHF and UHF radio systems with equipment operating in the 800/900 MHz range or with narrow band VHF or UHF radios, is significant.

We feel that the following issues need closer examination by the Commission, and that while 92-235 offers some very useful suggestions with regard to the future of private land mobile radio systems, additional refinement is essential. Airborne Freight Corporation is concerned about the following operational and technical changes and respectfully suggests additional consideration of each of these issues by the Commission:

1. The timeline proposed by NPRM 92-235 is very aggressive and does not allow sufficient time for the depreciation of existing radio equipment and infrastructure.
2. The cost of the conversion is high and shows little or no benefit for existing small and medium sized users, especially users with 'near exclusive' VHF and UHF channel assignments in suburban and rural areas.
3. The proposal seems to create an entirely new class of licensee; the for-profit SMR operation with exclusive channel assignments. These entities will be

permitted to operate SMRs where such assignments did not exist before the changes established by NPRM 92-235 are made.

4. A significant potential exists for a reduction in the availability of exclusive use channels in the 800 and 900 Mhz Business and Industrial/Land Transportation channel pools.

5. Radical reductions in channel bandwidths are likely to make radio equipment much more costly and reduce the number of vendors able to provide compatible products.

6. Significant reductions in authorized transmitter ERPs at medium and high elevations will greatly reduce operational range, significantly affecting our existing wide area service. These systems operate at high power on VHF and UHF channels precisely because wide area operation was a design requirement.

7. No common definition with regard to emission technique or trunking scheme. Multiple methods of generating efficient narrowband modulation will result in incompatibilities between each manufacturers product.

8. No indication of coordination of narrowband conversion efforts with Canadian or Mexican authorities.

Specific Concerns

In an attempt to amplify our concerns, we have elaborated on each area of concern. In addition, we have included suggestions as to possible improvements in NPRM 92-235.

1. Implementation Timeline

The proposed two tier conversion scheme makes little sense for existing users for two reasons. This approach creates the very real possibility of additional interference to systems operating at reduced bandwidth and ERPs from adjacent channel users. In addition, the method proposed by the Commission creates a period of uncertainty between 1996 and the eventual mandated cut-over dates in the 2004-2012 period.

Suggested Alternative Approach

Eliminate the first stage (1996) for narrowband conversion and retain the 2004-2012 dates for full conversion to narrowband operation. This allows for better planning of system conversion, while allowing adequate time for the amortization of existing radio equipment assets. This approach will allow manufacturers to build a single radio product capable of operating on both existing wideband channel spacings and those proposed in NPRM 92-235.

2. Cost of Radio System Conversion

The proposal offers little in the way of a market-based incentive for radio system conversion. The creation of additional channels does not expressly guaranty exclusive channel assignments, yet conversion will have very real costs for users who must comply with equipment change out schedules.

In addition, the vertical stacking of users on a shared channel actually serves as a significant disincentive to conversion since this method of assignment will, in many cases, result in much greater channel congestion for existing licensees.

Suggested Alternative Approach

We would like to see the Commission develop a market incentive based approach to the conversion task. Perhaps a better method of easing the conversion process before the mandated conversion dates would be to allow existing licensees the option of negotiating with co-channel licensees for channel exclusivity. After agreeing with all affected co-channel users, a licensee or group of licensees could split an existing 'wideband' channel into two or more exclusive use channels and begin using narrowband technology well in advance of any FCC mandated changes.

The creation of exclusive assignments from shared channels would serve as the driving force behind conversion, creating an operational incentive for early conversion. Exclusive use without full loading would be guaranteed for some period of time, perhaps as long as five years. At the end of that time period, channel loading would be reviewed by the FCC. If loading was determined to be sufficient to retain exclusive assignment, channel exclusivity would be protected. If loading did not meet established standards, the Commission could assign users up to (but not to exceed) full loading.

3. Creation of VHF SMR Systems via Innovative Shared Use Program

The creation of trunked SMR systems at VHF, while potentially a very effective means of providing high quality communications services to small business users, is at odds with the way in which Airborne uses assigned spectrum. We are currently competing with SMR system operators for spectrum in most major markets where all 800 and 900 MHz channels have been assigned. SMR system operators and channel speculators have added channels to their fully loaded trunked systems by targeting Business and Industrial/Land Transportation Pool channels.

This severely limits channel availability for large and medium sized dispatch systems like those used by Airborne in support of our delivery operations. In many markets, the policy of allowing reassignment of General Pool, Business Pool and Industrial/Land Transportation channels for SMR use has significantly increased our cost of operation by forcing Airborne to use those same SMRs for our dispatch requirements.

For this reason, Airborne is concerned that permitting reassignment of VHF and UHF channels from Land Transportation and Business Radio Service eligibles to SMR operations will result in expanded competition for these assignments with the result that Airborne will be forced to use expensive SMR systems.

Suggested Alternative Approach

SMR operations should be prevented by service rules from expanding beyond predetermined channel assignments, preventing encroachments on other service pool assignments. This approach would protect both large and small users of spectrum from aggressive SMR operators, while not significantly reducing the opportunities available to SMR entrepreneurs.

4. Reduced Availability of 800/900 MHz Exclusive Use Assignments

The uncertainty fostered by the Commissions proposal for a two phase conversion from existing wideband channel assignments to narrow band assignments will force smaller, existing VHF and UHF radio users to place conventional 800 and 900 MHz radio systems into operation. This will have the unintended effect of creating many partially utilized 800 and 900 MHz channels, channels where an

exclusive assignment would no longer be possible due to the presence of smaller users.

The net effect will be to remove channels from the pool of channels available to Airborne. In all cases where we are authorized an 800 or 900 MHz channel, Airborne is able to fully load these assignments. This unintended migration will have a severe impact on our ability to efficiently dispatch our fleet, and will take a very real toll on our overall operational efficiency.

Suggested Alternative Approach

The Commission should work to create certainty in the reallocation process. Elimination of the two phase approach to conversion and the setting of realistic deadlines for conversion, will allow small and medium sized users to more easily amortise the investment they have in their existing VHF and UHF radio systems. Setting a single date (for each market grouping) for conversion from existing wideband systems to narrow band systems would help eliminate the concerns many users would have in the gap created between 1996 and the market conversions established for the 2004 to 2012 timeframe.

5. Reductions in Channel Bandwidth

The proposed reductions in channel bandwidth are quite radical given the current state of the radio art with regard to narrowband transmitter and receiver technology. Type accepted equipment suited to the channel separations proposed is currently available from only one vendor. Compare this situation with the tens if not hundreds of products available from vendors capable of operating on the existing 'wideband' FM radio systems. Even the market leader, Motorola, has indicated that they would have difficulty producing a product suited for operation on the proposed channel centers with the required emission mask.

This is not to say that a range of narrowband products would not be available within four or five years of a Rule Making, but rather that the lack of products contributes greatly to the uncertainty associated with the entire narrowband conversion process. This sense of uncertainty is not a positive environment in which to conduct business, especially when radio communications are an essential support function for other commercial activities.

Suggested Alternative Approach

Unlike the creation of the new narrowband radio service at 220 MHz, the proposals outlined in NPRM 92-235 would displace existing commercial and governmental organizations who depend on availability of their radio systems to support their activities. Creation of any unneeded sense of uncertainty with regard to the status of these systems is counterproductive and should be avoided in any Commission proposal.

We would suggest delaying any initial implementation of the proposal until such time as several (perhaps ten) type accepted products capable of operation on the narrowest channel spacing proposed are available for sale. At that point in time, the 'clock starts running'. The 1/1/2004-2012 dates could be used as drop-dead dates when all conversion was to be complete, effectively 'directing' the market to produce products for the narrowband assignments.

6. Reduction in Authorized ERP

The proposed reductions in authorized ERP for systems operating after 1996 are entirely out of step with operations outside of the densest urban areas.

These systems operate at VHF and UHF precisely because of the superb propagation offered at these frequencies. VHF assignments perfectly suit the requirements of wide area rural or suburban operations, allowing for the cost effective performance essential in commercial and governmental radio systems. To attempt to restrict coverage contours at VHF and UHF runs contrary to the 'best use' of these assignments. Radio systems operating in the Western United States more often than not depend on mobile relay or remote base station systems located on very high mountains. These systems provide wide area coverage, coverage required because of the nature of the widely dispersed populations in this region.

Urban users may wish to provide a high level of radio signal 'penetration' into a building or neighborhood. This might best be accomplished by using a high elevation radio site such as the World Trade Center and a high transmitter power output. This application would also use a very low gain antenna since the desired area of service is directly beneath the transmitter location. In this instance, the proposed ERP limits would prevent engineering a system that would come close to meeting the requirements of the radio system users. Public Safety users would feel the impact of such changes immediately as would the myriad of organizations that deliver products and services in a dense urban environment.

The Commissions proposal does not consider how these assignments are currently used and seems to only look to 'cellularization' of dispatch radio service as the only way in which to assign these channels. In this case the desire for frequency reuse is out of touch with how these systems function and the need they fill. The result is a vastly more expensive infrastructure simply to provide the same signal strength over the desired service area. Base stations and repeaters would need to be distributed among multiple radio sites at lower altitudes to meet the needs of the wide area operations. Each additional radio site would require additional equipment be bought, leases negotiated, and monthly site access fees be paid. The net effect is a very significant impact on the cost of operating private radio systems.

In addition, the proposal made no accounting for the additional 9 to 10 db of path loss differential between 155 MHz and 460 MHz radio systems. The use of a single ERP vs. height table for both 150-216 MHz and 450-470 MHz is flawed as a result. The penalty in coverage reduction for 450-470 MHz systems is significantly greater than that experienced by VHF systems forced to reduce power and/or HAAT to meet the ERP limits proposed in 92-235.

Suggested Alternative Approach

A thorough reconsideration of how VHF and UHF assignments are used is clearly in order, especially in rural and suburban areas. The proposed ERP limits are entirely too restrictive for reasonable operations, especially when wide area operations are required. We suggest implementation of modest reductions in ERP based

also be included in the NPRM, especially where such use seeks to reduce co-channel interference to other authorized radio systems.

7. Lack of Definition of Emission Standards for Interoperability

The Commission has seen fit to not establish any standards (other than an emission mask) for a proposed modulation scheme for use with the narrowband assignments in NPRM 92-235.

Suggested Alternative Approach

The Commission should establish a standard emission type and trunking scheme that all radio equipment intended for use in the new services must include. Additional methods of modulation and trunking could be offered in products, but the common standard would always be required. This would allow common interoperability between all radio systems.

8. No coordination of narrowband conversion efforts with Canada or Mexico.

No mention is made of contacts with the regulatory authorities in Mexico or Canada. This would obviously be essential to any successful conversion to narrowband technologies in areas in close proximity to the Canadian and Mexican border.

Suggested Alternative Approach

As with the conversion timeline itself, coordination of conversion efforts with Canadian and Mexican authorities is essential to a smooth transition from existing FM technology to the very narrowband assignments proposed in the NPRM. We would hope that this process will not be left to chance and that the Commission is making efforts to coordinate the proposed changes with bordering nations.

Conclusion

While most communications industry professionals recognize that there is a significant spectrum shortage in the top 10 markets in the United States, and that shortage has a significant economic impact in the effective operation of many businesses, the changes proposed in NPRM 92-235 clearly require refinement. Airborne Freight Corporation sincerely hopes that the Commission will give additional consideration to the need of both large and small 'private' users of the spectrum resource, while permitting very limited 'public' (SMR) use of new channel assignments.

The current trend to larger and larger suppliers of radio service (SMRs and Private Carriers) represents a significant trend in the radio communications industry. This trend is in many ways, contrary to the trend seen in the wireline telephone industry where a few service and hardware suppliers, primarily the Bell System and affiliated carriers, became a vigorous and diverse market with many suppliers. With the vertical loading proposed in 92-325, only the largest private licensees and SMR operators will be able to assure a reasonable grade of service. Small and medium sized radio users will be limited to intensively shared radio systems offering no better service than the crowded channels now found in most large urban areas. We would hope that the FCC would work to ensure that small and medium sized operations are able to reasonably obtain usable channel assignments, especially give the high cost of conversion expected with the move to very

aggressive given several important changes on the horizon. These changes include the development of PCN/PCS technology, the availability of digital cellular service and potential for dispatch operation over cellular, and the proposed transfer of approximately 200 MHz of Federal Government spectrum to the FCC control.

Finally, offering stronger market-based incentives to allow conversion of existing VHF and UHF assignments before reassignment in the next decade may offer some relief to business users with an more immediate requirement for exclusive channel assignments. It is our hope that the Commission will take a 'step back' and give consideration to the responses received to the radical and innovative proposals set forth in NPRM 92-235. Thank you for the opportunity to comment on this NPRM.